

BENCHMARKS

VOLUME 2 NUMBER 5 NORTH TEXAS STATE UNIVERSITY SEPTEMBER 1981

*BENCHMARKS was produced using MUSIC/SCRIPT

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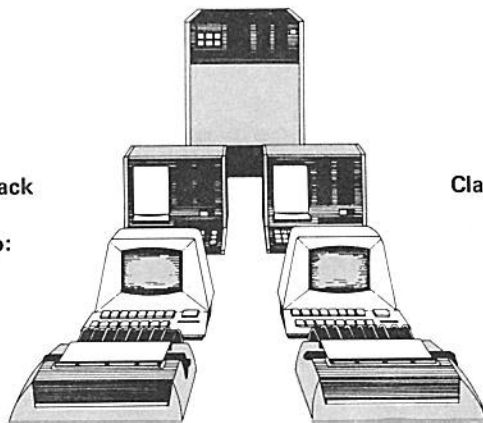
BENCHMARKS Reader/User feedback is encouraged.

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Richard Harris,
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YOUR TIME IS UP

September is the month for renewal. If you have had a project number for the AS/5000 or an ID on the HP-2000 and have not already renewed it, it is no longer valid. All AS/5000 project numbers and HP-2000 ID codes expired as of midnight, August 31. Renewal of AS/5000 project numbers and HP-2000 ID's is accomplished in the same manner as attaining one for the first time (see "Services Available to Users of the NTSU Computing Facilities" in this issue).

SERVICES AVAILABLE TO USERS OF THE NTSU COMPUTING FACILITIES

In order to become a computer user at NTSU you must first have a project number. This project number, which entitles one access to the AS/5000 computer and/or related services provided by the Computing Center staff, is attained by gaining authorization from the budget authority of the account to which charges are to be made (i.e., department head). This may be accomplished in several ways, all of which require completion of the NTSU Computing Center Project Number Request form, obtained from the Computing Center. One may (a) go directly to a department head, (b) go through another faculty member, who goes to a department head, or (c) enroll in a class that requires utilization of the AS/5000 (equivalent to b). Once account authorization is attained, the prospective user will be assigned a project number by the Computing Center. It is, of course, the responsibility of the user to protect his/her project number from "pirates" who may conspire to steal computer time. Failure to do so could result in the suspension of the user's account authorization.

In order to obtain a User ID and Password for the Hewlett-Packard (HP) Timeshare System, the NTSU HP Timesharing Service ID Request Form, available at the Computing Center, must be completed for the issuance of ID codes and passwords. Faculty member approval of the request form is required. As with the AS/5000 project number, the user him/herself is responsible for the security of his/her ID code and password.

Access to the McGill University System for Interactive Computing (MUSIC) is gained in the same manner as is access to the AS/5000. The user must additionally complete a MUSIC Timeshare Service ID Request Form available at the Computing Center.

Once account authorization is obtained, the following services are offered to users of the Computing Center :

Information and Project Numbers can be obtained from Sandy Franklin or Sue Heffley in the Computing Center Reception Area, ISB 119.

Test Scoring and Analysis is also available through Sue Heffley or Sandy Franklin.

Newsletter Questions/Contributions/etc. should be directed to Claudia Putnam.

Statistical/Research Support is provided for graduate students and faculty members by Bob Brookshire, George Morrow, Claudia Putnam, Abdi Salahshour and Mohamad Salahshour. A number of statistical packages and programming languages are available and supported at various levels of consultation.

Non-Research Student Programming Problems are handled by the student consultants from the Computer Science Department who can be found in ISB 134A near dispatch and the user keypunch area. Student consulting provided by the College of Business is available at the BA Computing Access Facility.

JCL and Debugging Problems should be directed to Abdi or Mohamad Salahshour.

Pre-Research Counseling, Including Survey Instrument Design, is provided by Bob Brookshire, George Morrow, and Claudia Putnam.

Keypunch Requests and Questions Regarding Layout of Keypunch Sheets should be directed to Betty Grise, ISB 227.

Academic Timesharing Information and/or Problems. HP/2000 and AS/5000 MUSIC (McGill University System for Interactive Computing) information and problems, including terminal problems, are handled by Abdi Salahshour.

Administrative Applications are handled by Coy Hoggard.

AS/5000 Computer Hardware/Software/Billing Problems should be referred to Sandy Franklin.

JOB Submission and Retrieval is handled by the RJE operators.

COMPUTING CENTER WORKSHOPS AND SHORT COURSES

As a result of numerous requests Academic Computing Services is organizing a series of short courses covering selected topics concerning the uses of the computing systems available at NTSU. The first series will be held the week of September 14, 1981. The first courses offered were selected as a result of a questionnaire published earlier in BENCHMARKS. Our plans tentatively call for another series early in the second semester. If there is sufficient demand, however, we may offer either the courses announced here, or others, earlier than the second semester.

Graduate students are particularly encouraged to take heed of this notice. If you are a graduate student and intend to use the computing facilities in courses, or for thesis or dissertation projects, you should learn the rudiments of computer use--you should become minimally literate with respect to computers. Please pass this information on. The course schedule is as follows:

Title	Day	Date
Introduction to Music	Mon.	9/14/81
Introduction to SPSS	Tu./Thur.	9/15, 9/17
Introduction to SAS	Wed./Fri.	9/16, 9/18

The time for the short courses will be 3:00 p.m. to 5:00 p.m. in SB 231. A registration form is located at the back of this issue of BENCHMARKS and should be completed and returned IMMEDIATELY if you wish to attend any of these sessions (copy the form and pass it on to a friend, if you like). If you have further questions or suggestions, please call us at (817) 788-2324, or send MAIL to the SYSTEM (see the June 1981 BENCHMARKS for more information on sending Mail).

COLLEGE OF BUSINESS SHORT COURSES

The College of Business Administration will be offering a series of short courses designed to provide familiarity with the equipment and vocabulary of the University and College of Business computing facilities. General topics are :

Introduction to Computers (TI-990) and Data Processing (Level I)
Survey of Programming Languages (Level II)
Statistical Packages (Level II)

The Level I Program will be offered this fall in four sections on the following dates:

Section 1 - Monday, October 5, 12, 19
Section 2 - Tuesday, October 6, 13, 20
Section 3 - Monday, November 2, 9, 16
Section 4 - Tuesday, November 3, 10, 17

Each section is limited to ten participants on a first come, first serve basis and will meet from 2 - 4 p.m. in Room 154 of the Business Building. The individual section sign-up sheets are located on the receptionist's desk in the Dean of the College of Business' office.

The Level II programs are designed to provide operational knowledge and skill in either programming languages or statistical packages. It is possible to sign up for both of these approaches. The Level II programs will be scheduled during the spring semester, 1982.

NEW TAPE DRIVES ON ORDER

Sometime during September, 1981, the existing system tape drives will be replaced by four new drives. The new configuration will consist of three dual density 1600/6250 bpi (bits per inch) drives and one dual density 800/1600 bpi drive. All four drives will operate at 200 inches per second. The acquisition of the new drives will require some modifications to existing Job Control Language (JCL) in order to use them effectively. All OS/MVT project number holders will receive a detailed technical memo concerning appropriate changes and the changeover date later in the month. All existing tapes will continue to operate properly on the new drives. The advantage of the new drives is that they will handle data faster and allow more data to be resident on a single tape.

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*           M U S I C           *
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MUSIC VERSION 5

Release 5 of MUSIC has been ordered and should be up and running early in the Fall semester. It will be necessary to purchase a new manual, available in the University Store, which documents the changes and additions since Version 4.1. Some significant new features in MUSIC release 5.0 are:

1. A restart feature - enables a user to recover an edit session after a system failure or line disconnection.
2. "Full-screen" edit mode on 3270-type terminals.
3. New commands in the Context Editor - SHOW, JOIN, MSG, RENAME, and * (comment).
4. Enhanced commands in the Context Editor - SEQ, NAME, UP, SPLIT, and WINDOW.
5. The Editor will no longer be subject to the user's execution time limit.
6. If a file containing any lower case letters is edited, but the /TEDIT or TEXT LC or TEXT SCRIPT command has not been used to prevent automatic translation of lower case input to upper case, a warning message will be issued as a reminder to the user.
7. The VS BASIC processor now supports record-oriented, I/O functions for both sequential and direct access files. This gives the user the ability to format the data records.
8. Length of connect time and number of service units used are now printed by the /STATUS and /OFF commands.
9. A new LINES parameter has been added to the /CTL command. This parameter can be used to dynamically set or change the number of lines displayed per screen for ASCII terminals.
10. A new tape utility is available that can copy, dump, and summarize tapes of arbitrary format.
11. On ASCII terminals, the BREAK key can be used to cancel an entire line, prior to pressing the RETURN key.
12. The DSLIST utility now gives the date of last reference for the UDS files listed.
13. Funds remaining for the user code as of the last accounting will be printed at sign on time. If the user code is low on funds, a warning message will also be issued (not significant, at this time, for users of MUSIC at NTSU).
14. MUSIC can now support both versions of the APL character sets available on 3270 terminals. To differentiate between the two versions, a new terminal class 3270B has been added. 3270A now refers to the APL available on 3277 terminals while 3270B refers to that available on 3278 and 3279 terminals.

VERSION 5.0 MUSIC MANUALS NOW ON SALE

Manuals are now available for Version 5.0 of MUSIC. Both the MUSIC USERS GUIDE and the MUSIC SCRIPT USERS GUIDE can be acquired from the University Store by individuals or from Office Supply (through normal departmental requisitions) by departments. The Computing Center is no longer providing manuals.

MUSIC Version 5.0 is targeted for implementation on or about October 1, 1981. Because of printing and publishing costs we are making Version 5.0 manuals available rather than additional Version 4.1 manuals. Version 5.0 is completely upward compatible from Version 4.1. Only a few of the Version 5.0 enhancements will not be available to MUSIC users until October 1. All Version 5.0 enhancements are documented in the front of the new manuals and in the preceding article.

HELPFUL HINTS ON USING THE MIME-2A

The MIME-2A terminal, several of which are available for general use in the Media Library in the General Academic Building, has a variety of features that many of you may find useful. We are presenting some helpful hints to serve as a general introduction to this machine.

The MIME-2A terminal power switch, located on the back of the terminal, should illuminate when turned on. After a one minute warm-up period, the monitor should display a blinking cursor in the upper left corner of the screen. The brightness can be adjusted by a central switch on back of the terminal cabinet. Don't try to adjust the small up-down switches on the lower left of the cabinet back, however. The settings of these switches determine the compatibility of the terminal with our Central Processing Unit, and if these are altered, the terminal may not operate properly.

The top row of the keyboard contains 16 function keys which are primarily used to control various functions. For example, when the LINE/LOC is in local mode (key down), everything that is keyed in is echoed to the screen but is not transmitted to the computer. Data may be sent out of I/O or AUX parts when in the local mode, by depressing the following keys:

KEYS

(PAGE/SEND/LINE)

(SHIFT) (PAGE/SEND/LINE)

(CTL) (PAGE/SEND/LINE)

SEND OPERATION

SEND LINE: Sends data from left margin to the present cursor position followed by a carriage return.

SEND PAGE: Sends data from the home position to the present position of the cursor. At the end of each line a carriage return is sent.

SEND BLOCK: Stores an end of text marker at the present cursor position and then searches backwards for a previous end of text marker (EOT); if no previous

EOT is found, then home position is taken. All data between these two EOT's is transmitted.

This feature is useful in combination with the MUSIC EDIT command to edit files when in EDIT mode. For example, to replace the line currently being edited in EDIT mode you can combine several of these functions as follows:

- 1) Hit the (LINE/LOC) key to put the terminal in "local" mode;
- 2) Move the cursor to the currently edited line with the "arrow" keys;
- 3) Hit the (LINE/INS/CHAR) key to put the terminal in "insert" mode
- 4) Enter 'r ' (the letter "r" and one blank space) to indicate to the editor that you are replacing the current line;
- 5) Make any necessary changes to the line using the "arrow" keys to move the cursor, and the (LINE/INS/CHAR) or (LINE/DEL/CHAR) keys to insert or delete characters;
- 6) After you have completed these changes, hit the (LINE/LOC) key to take the terminal out of "local" mode;
- 7) Hit (PAGE/SEND/LINE) to send the changed line to be processed.

For a more detailed description of the MIME-2A keys, see the OPERATING MANUAL, MICRO-TERM, INC., MODEL MIME-2A.

To take advantage of MIME-2A terminal features at sign on time, follow the ID CODE with a semicolon and the word MIME, ex. :

/ID your ID code; MIME

TESTER

As mentioned in the June 1981 BENCHMARKS, TESTER, a computer assisted test construction program is now available. TESTER was designed to help teachers rapidly compose and print tests, and it works best from a "test bank" approach, where groups of instructors share a common test bank. Anyone interested in using tester may print a copy of the manual by executing TESTER.DOC on a hardcopy terminal. This document has been altered since August 1, so it will be necessary to reprint the manual if you have a pre-August copy. In addition to obtaining documentation on TESTER, it is also necessary for a potential TESTER user to contact Abdi Salahshour, the MUSIC Time-Share Coordinator, prior to executing any TESTER programs. This is necessary, because attributes must be given to a TESTER user's ID-code that are not normally enabled.

MUSIC NOTES

1. Please note 2 **ERRORS** in the June BENCHMARKS.
 1. The Volume number should be 4 instead of 3.
 2. In the table on page 3 on "Priority Setting for Batch Jobs", the first estimated time should be :05 .

SAS 79.5 + ETS

SAS version 79.5 has replaced, as of August 31, version 79.3, as the procedure invoked when the control card // EXEC SAS is used in a job. Version 79.3 is the release that has been available to users since NTSU became a SAS installation. The current release of SAS (79.5) brings with it additions, enhancements, changes, and the need to purchase (sigh) more manuals. The additional manuals, which are available at the NTSU store, are:

SAS Technical Report P-115 (SAS 79.5 Changes and Enhancements)
 SAS Technical Report S-120x (Supplemental Procedures)
 SAS/ETS User's Guide (Econometric and Time-Series Library)

All users will not need, or want, to purchase each of the additional manuals. People who do not deal with econometric data, for example, will probably have no need for using ETS. At a minimum, however, it is recommended that the "Changes and Enhancements" report be purchased.

Briefly, some of the differences between SAS 79.3 and SAS 79.5 (as described in the "Changes and Enhancements" document) are:

I. Additional Functions

- A. Mathematical and Statistical Functions
- B. Character Functions
- C. State and ZIP Code Functions
- D. Date and Time Functions

II. Changes to Procedures

- | | |
|-------------|--------------|
| A. BMDP | M. MATRIX |
| B. CANCORR | N. NLIN |
| C. CHART | O. PDSCOPY |
| D. CONTENTS | P. PRINT |
| E. COPY | Q. RELEASE |
| F. DATASETS | R. RSQUARE |
| G. EDITOR | S. SORT |
| H. FACTOR | T. SOURCE |
| I. FORMAT | U. STEPWISE |
| J. FREQ | V. SUMMARY |
| K. FUNCAT | W. TAPECOPY |
| L. GLM | X. TAPELABEL |

III. New Procedures

- A. FASTCLUS (fast clustering)
- B. PRINCOMP (principal components)
- C. REG (regression)
- D. RSREG (response surface regression)
- E. STEPDISC (stepwise discriminant analysis)
- F. TRANSPOSE (transposing SAS data sets)
- G. VARCLUS (clustering variables)

New Supplemental Procedures are:

- A. MATPAR - matched-pair correlation
- B. FMTLIB - reads a format library produced by PROC FORMAT and outputs the library's contents into an easy-to-read listing or into a SAS data set.
- C. Nine SAS functions in FORTRAN which compute general chi-squared, t, and F distributions and their inverses.
- D. TABLES - computes and tabulates simple univariate statistics for

- all applicable variables for a control group and up to nineteen treated groups.
- E. ADCLUS - finds overlapping clusters of objects.
 - F. MRANK - performs multivariate rank tests using the method of m-rankings.
 - G. ITEM - does item analysis for multiple-choice tests.
 - H. LATTICE - computes the analysis of variance of simple covariance for data from an experiment.
 - I. INBREED - calculates the covariance or inbreeding coefficients for a pedigree.
 - J. RIDGEREG - computes ridge and incomplete principal component parameter estimates for linear regression models.

In addition to the new procedures available through SAS 79.5 and its supplemental library, ETS - the econometric and time-series library, as mentioned above, is also available. The ETS procedures are accessed through a PROC statement, just as all the other SAS procedures are. The procedures contained in ETS are :

- A. PROC FORECAST - easy univariate forecasts
- B. PROC ARIMA - Box-Jenkins univariate forecasts
- C. PROC STATESPACE - statespace multivariate forecasts
- D. PROC X11 - X-11 seasonal adjustment
- E. PROC SPECTRA - spectral analysis
- F. PROC AUTOREG - regression with autoregressive errors
- G. PROC SYSREG - estimation of linear systems
- H. PROC SIMLIN - simulation of linear systems
- I. PROC MODEL - specification of nonlinear systems
- J. PROC SYSNLIN - estimation of nonlinear systems
- K. PROC SIMNLIN - simulation of nonlinear systems
- L. PROC COMPUTAB - row-and-column financial reporting
- M. Proc MORTGAGE - amortization schedules
- N. PROC FORMAT - picture formats

SAS BUG

There is a bug in PROC PREDICT which will be fixed sometime this semester. Until that time it is advisable to use PROC LOGIST instead.

SPSS 9

A new version of SPSS is now up and running, and is the procedure accessed when you // EXEC SPSS . Predictably, it is necessary to purchase a new update manual - SPSS UPDATE 7-9 , available in the NTSU Store. According to the manufacturers of SPSS, most of the procedures have been modified to offer new options, improved accuracy, or improved performance. Additionally, several new procedures are available in Release 9. These are:

- MANOVA - a general linear models procedure.
- BOX JENKINS - identification, estimation, and forecasting for univariate time series.
- NEW REGRESSION - multiple regression analysis with extensive facilities for residual analysis.

Please note NTSU does not currently have the GRAPHICS option, therefore the chapter on SPSS GRAPHICS should be ignored.

COOKING WITH CANNED PROGRAMS : A GUIDE TO INSTRUCTION IN THE STAT PACKS

This article represents the beginning (hopefully) of a continuing list of classes offered throughout the campus which focus or at least touch on the use of the various statistical packages (SPSS, SAS, OSIRIS, BMD to name a few) available to researchers these days. Armed with this information, it is hoped that the would-be computer resource user can point him/herself in the direction that most fits his/her needs with regard to research methods.

<u>CLASS</u>	<u>DEPARTMENT</u>	<u>SEMESTER</u>	<u>REQUIREMENTS</u>	<u>OTHER INFO.</u>
Soci. 521	Sociology	Spring(82)	Soci. 385 or equivalent (intro. stat)	This is a Non-parametric stat class.
Bio. 601	Biology	Fall 1981	Grad. student or special permission	Analysis of biological data using SAS - assume no prior course work.
Biometrics	Biology	Each Fall	Grad. student or special permission.	Intro to Stat applications for biological research - use SPSS, SAS, NTSU STAT PAK & BMD.
Quantitative Methods in Geography	Geography	Spring(82)	Math 168 or equivalent.	Application of statistical techniques and mathematical models to spatial analysis - use various stat. paks.
Research Methods in Mass Communications	Journalism	Spring, Summer(82)	none	How to conduct research using statistics - use SPSS .

NTSU JOINS EDUNET

The NTSU Computing Center has acquired a membership in EDUNET. EDUNET is a national higher education computer network which provides services through a number of universities across the country. At the present time services are provided by such institutions as Stanford, Yale, Michigan, and other similar institutions. The use of EDUNET is not for everyone. Membership was acquired in order to provide computing services which cannot be provided locally. If you believe you have a problem which demands computing services not available at NTSU, please contact Tom Madron, Manager of Academic Computing Services at extension 2324.

AS/5000 USAGE STATISTICS - SEPTEMBER 1, 1980 TO JULY 31, 1981TOP TEN ACADEMIC USERS - DOLLAR AMOUNT FOR RESEARCH PROGRAMMING CHARGES

<u>ACCOUNT</u>	<u>CHARGES</u>
1. Education	\$ 8,584.44
2. Psychology	7,868.98
3. Health, Physical Education and Recreation	2,048.99
4. Sociology and Anthropology	1,159.51
5. Music	1,087.49
6. Business Administration Professional Fund Development	670.50
7. School of Community Services	625.45
8. Marketing and Business Education	572.99
9. Economics	328.50
10. Home Economics	314.99

TOP TEN ACADEMIC USERS - DOLLAR AMOUNT FOR COMPUTER CHARGES

<u>ACCOUNT</u>	<u>CHARGES</u>
1. Accounting and Information Systems	\$348,041.58
2. Computer Science	282,228.44
3. Management	49,965.44
4. Physics	26,452.66
5. Marketing and Business Education	15,518.23
6. Music	10,341.92
7. Political Science	10,239.33
8. Education	10,207.01
9. Finance, Insurance, Real Estate and Law	9,947.44
10. Geography	9,920.66

TOP TEN ACADEMIC USERS - DOLLAR AMOUNT FOR TOTAL CHARGES*

<u>ACCOUNT</u>	<u>CHARGES</u>
1. Accounting and Information Systems	\$352,760.66
2. Computer Science	282,865.72
3. Management	51,419.69
4. Physics	26,902.50
5. Education	21,400.28
6. Psychology	17,884.97
7. Marketing and Business Education	17,348.42
8. Music	11,996.19
9. Political Science	11,811.21
10. Finance, Insurance, Real Estate and Law	10,253.35

*Total Charges = Analyst + Programmer + Key punch + Computer + Supplies + Other Charges

ACADEMIC USERS - TOTAL DOLLAR AMOUNT FOR THREE AREAS

	(1) Research Programmer	(2) Computer	(3) Total
Instructional Use	\$26,203.20	\$817,389.30	\$867,757.50
Faculty Research	\$ 3,292.33	\$ 56,490.42	\$ 57,732.93

INDEX TO PAST ISSUES

In order to utilize BENCHMARKS to its fullest capacity and avoid redundancies, an index of previous issues containing information considered still pertinent to the NTSU Computing Center is included in each issue.

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CALLING ALL COURSES USING STATISTICAL PACKAGES - AGAIN

It has become apparent, as reported before, that there is a need for some type of list of courses that deal with the various statistical packages (SPSS, SAS, etc.) . There are many potential students for these classes, however they do not know where to go to find the class they desire. The Computing Center would like to help these people in their quest, but in order to do this, we must enlist the help of the professors, instructors, etc. who are offering the courses. So ... if you or anyone in your department is planning to teach a class in the next year that will be focused around one or more of the statistical packages, please take a moment to provide the following information. (If you do not want to fool with the paper work, you can call 788-2324 OR send a message to the "SYSTEM" while logged on to MUSIC - see "Electronic Mail System Revisited" in the June 1981 issue of BENCHMARKS - the Computing Center newsletter - for more information on sending mail):

1. COURSE TITLE (IF KNOWN) _____
2. School/Department course taught in _____
3. Short description of course _____
4. Semester(s) course will be taught _____
5. Prerequisites for attending course _____
6. Other pertinent information (specific packages used, etc.) _____

PLEASE RETURN TO:

Academic Computing Services
The Computing Center
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